WE CLAIM:

1. A method of decoding two-channel matrix encoded audio to reconstruct multichannel audio that approximates a discrete surround-sound presentation, comprising:

subband filtering the two-channel matrix encoded audio into a plurality of two-channel subband audio signals;

separately steering the two-channel subband audio signals in a sound field to form multichannel subband audio signals; and

synthesizing the multichannel subband audio signals in the subbands to reconstruct the multichannel audio.

2. The method of claim 1, wherein the reconstructed multichannnel audio comprises a plurality of dominant audio signals.

3. The method of claim 2, wherein said dominant audio signals reside in different subbands.

4. The method of claim 3, wherein steering the two-channel subband audio signals comprises computing a dominance vector in said sound field for each said subband, said dominance vector being determined by the dominant audio signals in the subband.

5. The method of claim 1, wherein subband filtering groups the subband audio signals into a plurality of bark bands.

6. The method of claim 1, wherein the two-channel matrix encoded audio includes at least left, right, center,

left surround and right surround (L,R,C,Ls,Rs) audio channels, said two-channel subband audio signals being steered into an expanded sound field that includes a discrete point for each said audio channel.

7. The method of claim 6, wherein each said discrete point corresponds to a set of gain values predetermined to produce an optimized audio output at each of L,R,C,Ls,Rs speakers, respectively, when the two-channel subband audio signals are steered to that point in the expanded sound field.

8. The method of claim 7, wherein each said discrete point further includes a gain value predetermined to produce an optimized audio output at a center surround (Cs) speaker when the subband audio signal is steered to that point in the expanded sound field.

9. The method of claim 7, wherein steering the audio signals, comprises:

computing a dominance vector in said sound field for each said subband, said dominance vector being determined by the dominant audio signals in the subband;

using said dominance vectors and said predetermined gain values for said discrete points to compute a set of gain values for each subband; and

using said two-channel subband audio signals and said gain values to compute the multichannel subband audio signals.

10. The method of claim 9, wherein the gain values for each subband are computed by performing a linear interpolation of the predetermined gain values surrounding

the dominance vector to define the set of gain values at the point in the sound field indicated by the dominance vector.

11. The method of claim 1, wherein the expanded sound field comprises a 9-point sound field, each said discrete point corresponding to a set of gain values predetermined to produce an optimized audio output at each of L,R,C,Ls,Rs speakers, respectively, when the two-channel subband audio signals are steered to that point in the expanded sound field.

12. A method of decoding two-channel matrix encoded audio to reconstruct multichannel audio that approximates a discrete surround-sound presentation, comprising:

providing two-channel matrix encoded audio that includes at least left, right, center, left surround and right surround (L,R,C,Ls,Rs) audio channels;

steering the two-channel matrix encoded audio in an expanded sound field that includes a discrete point for each said audio channel to reconstruct the multichannel audio; and

distributing the multichannel audio to a speaker configuration that includes a speaker for each of said L,R,C,Ls and Rs audio channels.

13. The method of claim 12, wherein each said discrete point corresponds to a set of gain values predetermined to produce an optimized audio output at each of the L,R,C,Ls,Rs speakers, respectively, when the two-channel matrix encoded audio is steered to that point in the expanded sound field.

14. The method of claim 13, wherein each said

discrete point further includes a gain value predetermined to produce an optimized audio output at a center surround (Cs) speaker when the subband audio signal is steered to that point in the expanded sound field.

15. A method of decoding two-channel matrix encoded audio to reconstruct multichannel audio that approximates a discrete surround-sound presentation, comprising:

providing two-channel matrix encoded audio that includes at least left, right, center, left surround and right surround (L,R,C,Ls,Rs) audio channels;

subband filtering the two-channel matrix encoded audio into a plurality of two-channel subband audio signals;

separately steering the two-channel subband audio signals in an expanded sound field to form multichannel subband audio signals, said sound field having a discrete point for each said audio channel, each said discrete point corresponding to a set of gain values predetermined to produce an optimized audio output at each of L,R,C,Ls,Rs speakers, respectively, when the two-channel subband audio signals are steered to that point in the expanded sound field; and

synthesizing the multichannel subband audio signals in the subbands to reconstruct the multichannel audio.

16. The method of claim 15, wherein the reconstructed multichannnel audio comprises a plurality of dominant audio signals that reside in different subbands.

17. The method of claim 15, wherein subband filtering groups the subband audio signals into a plurality of bark bands.

18. The method of claim 15, wherein each said discrete point further includes a gain value predetermined to produce an optimized audio output at a center surround (Cs) speaker when the subband audio signal is steered to that point in the expanded sound field.

19. The method of claim 15, wherein the expanded sound field comprises a 9-point sound field.